Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Message Text

PAGE 01 STATE 166451

60
ORIGIN NODS-00

INFO OCT-01 ISO-00 /001 R

DRAFTED BY S:WEGAN / EUR/SOV:MGARRISON:RBARRY:LCK
APPROVED BY S - THE SECRETARY
M - MR. EAGLEBURGER
S/S-O:AWOTTO
DESIRED DISTRIBUTION
S, M, C, AND DG ONLY
---------- 008673
O 032104Z JUL 76 ZFF4
FM SECSTATE WASHDC
TO AMEMBASSY MOSCOW IMMEDIATE

C O N F I D E N T I A L STATE 166451

NODIS
FOR THE AMBASSADOR FROM EAGLEBURGER

E.O. 11652: GDS

TAGS: ASEC, AMED, UR

SUBJECT: ELEASE OF MOSCOW SIGNAL FACT SHEET

1. FOLLOWING IS THE FULL TEXT OF THE REVISED AND UPDATED FACT SHE-T. THERE HAVE BEEN A SERIES OF MINOR MODIFICATIONS SINCE MARK POUCHED YOU THE EARLIER VERSION. YOU SHOULD TAKE STEPS AS SOON AS POSSIBLE TO RELEASE THE ENTIRE REVISED FACT SHEET TO THE MISSION STAFF WITH THE COVER SHEET DESCRIBED BELOW. YOU SHOULD IMPRESS UPON THEM THAT THIS IS AN ADMINISTRATIVELY CONTROLLED DOCUMENT AND THAT IT IS FOR THEIR EXCLUSIVE USE WITH PRIVATE FAMILY PHYSICIANS AND IN RELATED MEDICAL CONSULTATIONS. I WOULD ALSO APPRECIATE YOUR NOTING THAT WE EXPECT THEM TO RESPECT THE CONFIDENCE IN WHICH THIS DOCUMENT IS RELEASED.

2. I HAVE ALSO PROVIDED BELOW THE TEXT OF THE PRESS GUIDANCE THE DEPARTMENT SPOKESMAN WILL USE ON AN IF-ASKED
CONFIDENTIAL

PAGE 02 STATE 166451

BASIS.

3. YOU MAY ALSO INFORM THE STAFF THAT THE ADMINISTRATIVELY CONTROLLED FACT SHEET WILL BE DISTRIBUTED TO ALL

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

EMPLOYEES IN THE DEPARTMENT WITH PRIOR OR ANTICIPATED

MOSCOW SERVICE WHO HAVE BEEN BRIEFED. IN ADD,TION COPIES WILL BE TRANSMITTED BY POUCH TO EMPLOYEES AT OTHER POSTS ABROAD WHO HAVE BEEN SIMILARLY BRIEFED.

4. I AM SENDING YOU SEPARATELY THE TEXT OF A SOVIET NOTE DELIVERED BY DOBRYNIN LAST SATURDAY, JUNE 26. AS YOU WILL SEE, THE SOVIETS HAVE NO INTENTION OF MOVING ANY FURTHER UNLESS, AS I READ IT, WE ARE WILLING TO DO SOME THINGS OURSELVES.

5. WOULD ALSO APPRECIATE YOUR INFORMING THE STAFF THAT THEIR COOPERATION AND PATIENCE IN THIS MATTER HAS BEEN GREATLY APPRECIATED, AND THAT THE DEPARTMENT HILL CONTINUE TO ADDRESS THE ISSUE IN AS FORTHRIGHT A MANNER AS POSSIBLE WITH ALL CONCERNED EMPLOYEES.

6. BEGIN TEXT OF COVER SHEET:

THIS INFORMATION IS PROVIDED ONLY FOR USE OF U.S. GOVERN-MENT EMPLOYEES AND THEIR DEPENDENTS IN PRIVATE MEDICAL CON-SULTATIONS. IT IS NOT RELEASABLE TO OTHER U.S. OR FOREIGN NATIONALS EXCEPT IN THIS CONTEXT AND MUST BE TREATED AS ADMINISTRATIVELY CONTROLLED. END TEXT.

7. BEGIN TEXT OF FACT SHEET: SUMMARY

THE HISTORY OF THE INTENSITY AND DURATION OF THE MOSCOW SIGNALS CAN BE DIVIDED INTO FOUR SEPARATE PERIODS.

PRIOR TO MAY/JUNE 1975 TYPICAL MAXIMUM POWER LEVELS IN LIMITED LIVING AND WORKING AREAS WERE UP TO 5 MICROWATTS PER SQUARE CENTIMETER FOR NEVER MORETHAN 8 HOURS PER DAY. THESE TYPICALMAXIMUM LEVELS WERE 5/10,000 OF U.S. SAFETY STANDARD AND 50 PER CENT OF THE SOVIET STANDARD.

CONFIDENTIAL

PAGE 03 STATE 166451

FROM MAY/JUNE 1975 TO FEBRUARY 1976 SIMILAR MAXIMUM LEVELS DID NOT EXCEED 13 MICROWATTS PER CENTIMETER WITH A TYPICAL DURATION OF 18 TO 20 HOURS PER DAY. THESE LEVELS WERE 13/10,000 OF THE U.S. SAFETY STANDARD AND 130 PER CENT OF THE SOVIET STANDARD.

FROM FEBRUARY 1976 TO APRIL 1976 SIMILAR POWER LEVELS WERE 5 MICROWATTS PER SQUARE CENTIMETER OR LESS AND THE DAILY AVERAGE OF THE TOTAL DURATION OF BOTH SIGNALS HAS RANGED FROM 10 TO 20 HOURS PER DAY FROM FEBRUARY TO THE PRESENT. THESE LEVELS WERE 5/10,000 OF THE U.S. SAFETY STANDAR AND 50 PER CENT OF THE SOVIET STANDARD.

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

FROM APRIL 1976 TO THE PRESENT THE TYPICAL MAXIMUM LEVELS

HAVE BEEN LESS THAN 2 MICROWATTS PER SQUARE CENTIMETER WITH THE DURATION AS DESCRIBED ABOVE. THIS IS 2/10,000 OF THE U.S. SAFETY STANDARD AND 20 PER CENT OF THE SOVIET STANDARD.

IN FEBRUARY 1976 PROTECTIVE SCREENING WAS INSTALLED IN ALL EMBASSY WINDOWS. THIS SCREENING REDUCES THE POWER LEVELS IN ALL LIVING AND WORKING AREAS IN THE EMBASSY BY 90 PER CENT. IN ADDITION, AS IS DEMONSTRATED BY THE ABOVE, SIGNAL STRENGTH ITSELF HAS BEEN REDUCED CONSIDERABLY SO THAT MAXIMUM POWER LEVELS INSIDE THE EMBASSY ARE NOW A SMALL FRACTION OF A MICROWATT; FAR BELOW WHAT IS CONSIDERED TO BE POTENTIALLY HAZARDOUS BY U.S. OR SOVIET STANDARDS. OUR MEDICAL EXPERTS HAVE CONCLUDED THAT THERE IS AT PRESENT NO CAUSE FOR CONCERN ABOUT HEALTH HAZARDS AND THAT NO CAUSAL RELATIONSHIP HAS BEEN ESTABLISHED BETWEEN THESE MICROWAVE TRANSMISSIONS AND ANY HEALTH PROBLEM EXPERIENCE BY EMBASSY PERSONNEL, PAST OR PRESENT.

8. BEGIN TEXT OF FACT SHEET:

THIS STATEMENT HAS BEEN PREPARED BY THE DEPARTMENT OF STATE WITH THE ASSISTANCE OF CONSULTANTS EXPERT IN THE FIELD. IT IS AN UP-TO-DATE VERSION OF AN EARLIER CLASSIFIED BRIEFING PAPER PREPARED FOR OUR MOSCOW CONFIDENTIAL

PAGE 04 STATE 166451

EMPLOYEES TO DESCRIBE THE "RADIATION" PHENOMENON AND ANSWERS QUESTIONS THEY HAD RAISED. IT HAS BEEN RECAST TO REFLECT THE SUGGESTIONS MADE BY THOSE WHO HAVE BEEN BRIEFED HERE IN THE LAST SEVERAL WEEKS AND TO TAKE ACCOUNT OF RECENT DEVELOPMENTS. IT IS SUBJECT TO FURTHER REVISION AS NEW FACTS BECOME KNOWN.

HISTORY AND TECHNICAL CHARACTERISTICS

THE MOSCOW "SIGNALS" ARE DIRECTIONAL MICROWAVE BEAMS WHICH ARE DIRECTED AT THE UPPER FLOORS OF THE EMBASSY BUILDING FROM TRANSMITTERS LOCATED IN THE VICINITY. THEY INCLUDE THAT PORTION OF THE ELECTROMAGNETIC SPECTRUM DESIGNATED AS "MICROWAVES" WHICH ARE ULTRA- AND SUPER-HIGH FREQUENCY RADIO WAVES. THE FREQUENCY OF THE MOSCOW SIGNALS ARE IN THE GIGAHERTZ RANGE (BILLIONS OF CYCLES PER SECOND). SPECIFICALLY THEY ARE IN THE FREQUENCY RANGE OF 0.5-9.0 GIGAHERTZ. FOR REFERENCE TO WHAT REGULAR AM RADIO IS IN THE ONE MEGAHERTZ RANGE (1 MILLION CYCLES/SECOND), FM RADIO AND TV ARE IN THE RANGE OF ONE HUNDRED MEGAHERTZ TO ONE GIGAHERTZ (100 MILLION CYLCES TO ONE BILLION PER SECOND). SINCE THESE

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

MICROWAVE RADIATIONS ARE ON THE ORDER OF 10 CENTIMETERS OR SO IN LENGTH, SHORTER THAN OTHER RADIOWAVES OF METERS OR MORE, THE NAME MICROWAVE (MEANING SHORTER WAVELENGTHS) HAS BEEN USED TO DESIGNATE THIS FREQUENCY RANGE. SOME FAMILIAR USES OF MICROWAVES INCLUDE MEDICAL DIATHERMY MACHINES, MICROWAVE OVENS, TELEVISION TRANSMISSION, RADARS AND COMMUNICATION SYSTEMS.

LIKE VISIBLE LIGHT, INFRARED AND OTHER RADIO FREQUENCIES, MICROWAVES ARE OFTEN REFERRED TO AS NONIONIZING ELECTROMAGNETIC RADIATION. THE TERM "RADIATION" SIMPLY REFERS

TO ENERGY WHICH CAN TRAVEL THROUGH THE AIR WITHOUT THE USE OF WIRES. "NONIONIZING" RADIATION IS ENERGY WHICH DOES NOT BREAK MOLECULAR BONDS OR PRODUCE IONIZED PARTICLES WHEN ABSORBED. THIS RADIATION SHOULD NOT BE CONFUSED WITH "IONIZING" RADIATION SUCH AS X-RAYS OR RADIOACTIVE ISOTOPES AND GAMMA RAY NUCLEAR RADIATION WHICH CAN BREAK MOLECULAR BONDS, PRODUCE IONIZED PARTICLES
CONFIDENTIAL

AND DO SIGNIFICANT STRUCTURAL DAMAGE.

NONIONIZING ELECTROMAGNETIC RADIATION IS PRESENT IN ALL URBAN ENVIRONMENTS AT VERY LOW LEVELS; SMALL FRACTIONS OF A MICROWATT GENERALLY. THE COMMONEST SOURCE OF SUCH BACKGROUND OR AMBIENT RADIATION TODAY IS TELEVISION AND FM RADIO BROADCASTING BUT THERE ARE OTHER INDUSTRIAL, MILITARY AND COMMUNICATIONS SOURCES AS WELL. SUCH RADIATION IS PRESENT ALL OVER MOSCOW AS IT IS IN WASHINGTON, BUT IN THE EARLY SIXTIES WE FIRST VERIFIED THAT A DIRECTIONAL MICROWAVE SIGNAL OF VERY LOW INTENSITY WAS BEING AIMED AT THE TOP FLOORS OF OUR MOSCOW EMBASSY BUILDING.

THIS SIGNAL, WHICH WE WILL CALL SIGNAL NUMBER 1, WAS ON THE AIR INTERMITTENTLY FOR A FEW HOURS A DAY UNTIL JUNE 1975. IT WAS MONITORED CONTINUOUSLY AND MEASURED PERIODICALLY WHENEVER A CHANGE WAS DETECTED. AT ALL TIMES IT WAS FOUND TO BE WELL BELOW ANY LEVEL ASSOCIATED WITH KNOWN BIOLOGICAL HAZARDS. NEVERTHELESS, A SPECIAL RESEARCH PROJECT WAS CARRIED OUT TO DETERMINE WHETHER THERE COULD POSSIBLY BE ADVERSE PHYSIOLOGICAL OR PSYCHOLOGICAL EFFECTS. NO POSITIVE EVIDENCE OF SUCH EFFECTS WAS FOUND, AND THIS SPECIFIC PROJECT WAS ENDED. A BROADER, MORE COMPREHENSIVE PROGRAM ON THE EFFECTS OF NONIONIZING RADIATION WAS THEN INSTITUTED AND CONTINUES THROUGH THE PRESENT.

IN THE SPRING OF 1972, A NEW SIGNAL NUMBER 2 WAS DETECTED. HOWEVER, IT WAS ONLY ON THE AIR INFREQUENTLY AND IT DISAPPEARED AFTER A BRIEF PERIOD.

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

IN 1973, A SIGNAL (WHICH WE WILL CALL 3-A) APPEARED ON
THE SCENE FOR A FEW DAYS. IT REAPPEARED FOR A FEW MORE
DAYS IN 1974. ITS CHARACTERISTICS WERE SOMEWHAT DIFFERENT
IT HAD A DIFFERENT BAND-WIDTH (SPREAD OF FREQUENCIES)
AND SOMEWHAT HIGHER INTENSITY. BECAUSE OF ITS INFREQUEN-
T OCCURRENCE, IT DID NOT AROUSE CONCERN. IT CAME BACK
ON THE AIR IN MAY OF 1975, HOWEVER, AND HAS PERSISTED
SINCE THAT TIME. SOON AFTERWARDS SIGNAL NUMBER 1
SINCE THAT TIME. SOON AFTERWARDS SIGNAL NUMBER 1
CONFIDENTIAL

PAGE 06 STATE 166451

DISAPPEARED ENTIRELY.

IN OCTOBER 1975, ANOTHER SIGNAL, 3B, SIMILAR TO 3A,
BEGAN OPERATING. SINCE THEN WE HAVE HAD TWO SIGNALS--
3A AND 3B. BOTH ARE HIGHLY DIRECTIONAL, SOMEWHAT LIKE
SEARCH-LIGHT BEAMS, BUT WIDER, AND DIRECTED AT THE TOP
FLOORS OF THE CENTRAL WING OF THE EMBASSY. THESE TWO
BEAMS ARE SOMETIMES ON THE AIR SIMULTANEOUSLY FOR 3 - 4
HOURS A DAY. BECAUSE OF THE BEAM-LIKE NATURE OF THE
SIGNALS ONLY LIMITED AREAS OF THE CHANCERY ARE AFFECTED
AND THE LEVELS OF RADIATION EVEN IN THESE AREAS ARE NOT
UNIFORM, BUT VARY FROM PLACE TO PLACE AND WITHIN ANY
ONE ROOM.

A NUMBER OF THEORIES HAVE BEEN ADVANCED AS TO THE
PURPOSE OF THESE SIGNALS; ONLY THE SOVIET AUTHORITIES
ARE IN A POSITION TO GIVE A DEFINITIVE ANSWER AS TO
WHICH OF THEM IS CORRECT.

THERE IS NO EVIDENCE WHATEVER THAT THE AMBASSADOR'S
RESIDENCE OR STAFF, APARTMENTS, OFFICES, ETC., OUTSIDE
THE CHANCERY ARE AFFECTED BY SIMILAR SIGNALS. RECENT
CHECKS HAVE CONFIRMED THIS AND THEY WILL CONTINUE TO BE
MONITORED.

SIGNAL CHARACTERISTICS:

THESE RADIO SIGNALS ARE DEFINED BY THE INTENSITY,
DURATION, SPECIFIC FREQUENCIES, BANDWIDTH (SPREAD OF
FREQUENCIES) AND MODULATIONS (HOW THE WAVEFORMS ARE
SHAPED). WE MEASURE THE POWER LEVEL BY CARRYING INSTRU-
MENTS AROUND THE EMBASSY WHICH REGISTER THE INTENSITY
OF THE ELECTROMAGNETIC FIELDS. BECAUSE THE POWER LEVEL
IS SO VERY LOW, THE UNIT OF MEASURE IS IN MICROWATTS
(ONE MILLIONTH OF A WATT) PER SQUARE CENTIMETER.
DURATION, MOST SIMPLY, IS THE NUMBER OF HOURS PER DAY
THAT EITHER OR BOTH THE SIGNALS ARE ON; IT ALSO REFERS
TO THE TOTAL PERIOD OVER WHICH EXPOSURES ARE EXPERIENCED.

THE INTENSITIES AND OPERATING TIMES OF SIGNALS 1, 2, 3A

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

AND 3B ARE AS FOLLOWS:

-- SIGNAL 1, WHICH OPERATED UNTIL JUNE 1975, WAS ORIGINALL ON THE AIR FOR ABOUT EIGHT HOURS A DAY OR LESS AND IN RECENT YEARS FOR FIVE HOURS A DAY OR LESS. THE MAXIMUM LEVELS WERE 1 - 5 MICROWATTS PER SQUARE CENTIMETER OR LESS (THESE MAXIMUM READINGS WERE FOUND IN THE VICINITY OF WINDOWS IN SOME UPPER FLOORS OFFICES AT THE BACK OF

THE BUILDING). (NOTE: EARLIER VERSIONS OF THIS PAPER INDICATED THAT SIGNAL 1 PRODUCED A MAXIMUM INTENSITY OF 3 MICROWATTS. RECORDS EXAMINED SINCE THEN HAVE SHOWN THAT IN CERTAIN LIMITED AREAS READINGS AS HIGH AS 5 MICROWATTS WERE REGISTERED AT CERTAIN TIMES.)

-- SIGNAL 2, WHICH CAME ON THE AIR ONLY VERY BRIEFLY WAS VERY SIMILAR TO SIGNAL 1.

-- SIGNAL 3A WAS FOUND TO HAVE HIGHER INTENSITIES, UP TO AS MUCH AS THIRTEEN MICROWATTS PER SQUARE CENTIMETER IN SOME LOCALIZED AREAS. IT OPERATED FOR VARIOUS PERIODS OF TIME UP TO AS LONG AS FOURTEEN HOURS A DAY.

-- IN OCTOBER 1975, SIGNAL 3B BEGAN OPERATING FROM A DIFFERENT DIRECTION. THE SIGNAL CHARACTERISTICS WERE SIMILAR TO THOSE OF 3A EXCEPT THAT ITS MAXIMUM INTENSI-TY LEVELS WERE LOWER. SIGNAL 3B ALSO OPERATED FOR UP TO FOURTEEN HOURS A DAY. THE TYPICAL TIME DURING WHICH ONE OR BOTH SIGNALS OPERATED WAS 18-20 HOURS PER DAY, WITH BOTH ON AT THE SAME TIME FOR 3 - 4 HOURS.

BETWEEN OCTOBER 1975 AND JANUARY 1976 THE TYPICAL MAXIMUM LEVELS MEASURED WERE UP TO 13 MICROWATTS PER SQUARE CENTIMETER. (THE TERM "TYPICAL MAXIMUM LEVEL" TAKES INTO ACCOUNT THE FACT THAT ROOMS ARE NOT ILLUMINATED UNIFORMLY BUT THERE ARE A NUMBER OF AREAS WHERE RADIATION LEVELS ARE VERY LOW AS WELL AS A NUMBER OF "MAXIMUM POINTS." MAXIMUM LEVELS ALSO VARY CONSIDERABLY FROM ROOM TO ROOM. THE "TYPICAL MAXIMUM" REFERS TO READINGS WHICH ARE COMMONLY THE HIGHEST RECORDED, WHEN THE SIGNAL WAS OPERATING IN A "HIGH MODE." BOTH LOWER AND CONFIDENTIAL

HIGHER READINGS HAVE BEEN ATYPICALLY RECORDED AT INDIVI-DUAL POINTS FOR LIMITED PERIODS.) THE HIGHEST "MAXIMUM POINT" RECORDED IN AN ACCESSIBLE AREA WHEN BOTH SIGNALS WERE ON THE AIR AT ONCE WAS EIGHTEEN MICROWATTS. FOR THE MOST PART, HOWEVER, LEVELS WERE SUBSTANTIALLY LOWER

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

EVEN IN THE TOP FLOOR OFFICES WHERE THESE MAXIMUM
POINTS WERE OBSERVED.

MORE RECENTLY, POWER LEVELS HAVE DECREASED GREATLY AND
DURATION HAS VARIED. THE MAXIMUM LEVELS CURRENTLY
BEING MEASURED NEAR WINDOWS, WITH SCREENING REMOVED, ON
THE TOP FLOORS ARE TWO MICROWATTS PER SQUARE CENTIMETER
OR LESS. THESE LEVELS ARE BELOW BOTH THE U.S. AND THE
SOVIET STANDARDS, AND ARE BEING MONITORED CONTINUALLY.
ANY CHANGE WILL COME TO OUR ATTENTION WITHOUT DELAY.

WHEN THE CHARACTERISTICS OF THE SIGNALS CHANGED LAST
FALL, THE DEPARTMENT BEGAN TO CONSIDER COUNTER-MEASURES
INCLUDING VARIOUS KINDS OF WINDOW SCREENING. ALUMINUM
SCREENING WAS FOUND TO DECREASE THE INTENSITY LEVELS BY
A FACTOR OF 10, THAT IS BY 90 PERCENT. IT HAS BEEN
INSTALLED NOT JUST IN THE AREAS AFFECTED, BUT THROUGHOUT
THE BUILDING. THUS, WITH THE SCREENING IN PLACE AND
THE LEVEL OF INTENSITY OF THE SIGNALS THEMSELVES CUT
BACK TO TWO MICROWATT OR LESS MEASURED WITHOUT SCREENS,
MAXIMUM RADIATION LEVELS INSIDE THE EMBASSY ARE SMALL
FRACTIONS OF A MICROWATT.

IN THE PROCESS OF CAREFULLY MEASURING THE EFFECT OF THE
SOVIET SIGNAL OUR EXPERTS DETECTED ANOTHER PHENOMENON
WHICH DOES NOT INVOLVE MICROWAVE RADIATION BUT NEVERTHE-
LESS IS MENTIONED IN ORDER TO MAKE THIS FACT SHEET
COMPLETE. OUR MOSCOW EMBASSY HAS AN EMERGENCY TRANSMITTER
WHICH UP TO THIS YEAR WAS TESTED FOR A SHORT TIME EACH
MONTH (EXCEPT FOR LIMITED PERIODS OF USE DURING HIGH-
LEVEL VISITS). EARLY THIS YEAR, ONE OF THESE TESTS WAS
CONDUCTED WHILE MEASUREMENTS OF THE SOVIET SIGNAL WERE
IN PROCESS. IT WAS LEARNED THAT BECAUSE OF ITS PROXIMI-
TY TO OTHER ELECTRICAL CONNECTIONS, THE ANTENNA FOR THE
EMERGENCY TRANSMITTER PRODUCED HIGH LEVELS OF ELECTROMAG-
NETIC RADIATION FOR BRIEF PERIODS OF TIME IN THE AMBAS-
CONFIDENTIAL

SADOR'S OFFICE. HOWEVER, THE FREQUENCIES WERE WELL
BELOW MICROWAVE FREQUENCIES (15 MEGAHERZ, COMPARED TO
1000 TO 10,000 MEGAHERZ WHICH ARE THE MICROWAVE FREQUEN-
CIES). MEASUREMENTS OF THE LEVELS IN THAT OFFICE UNDER
BRIEF TEST CONDITIONS INDICATED THAT THE HIGHLY LOCALI-
ZED RADIATION FELL WITHIN U.S. SAFETY STANDARDS, EXCEPT
THAT AT DISTANCES OF A FEW INCHES FROM CERTAIN ELECTRI-
CAL INSTALLATIONS IN THE ROOM IT EXCEEDED U.S. SAFETY
STANDARDS. WE ARE ALTERING THE INSTALLATION TO PREVENT
SUCH EFFECTS IN THE FUTURE AND MEANWHILE THE TRANSMITTER
WILL NOT BE USED.

SAFETY STANDARDS

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

MOST COUNTRIES OF WESTERN AND EASTERN EUROPE, INCLUDING THE SOVIET UNION AND OURSELVES HAVE DEVELOPED "OCCUPATIONAL STANDARDS"--THAT IS, A LEVEL BELOW WHICH EXPOSURE TO MICROWAVE RADIATION FOR A WORKING DAY FOR A NORMAL ADULT IS CONSIDERED ACCEPTABLE (ACTUALLY THE UNITED STATES DOES NOT EXPLICITLY LIMIT THE DURATION OF EXPOSURE). THESE STANDARDS ARE INTENDED TO APPLY TO PEOPLE WHO WORK WITH OR NEAR RADIATION OF THIS SORT--INDUSTRIAL WORKERS, AIR TRAFFIC CONTROLLERS, RADAR

OPERATORS, ELECTRONICS TECHNICIANS, MILITARY PERSONNEL AND THE LIKE. THERE IS A CONSIDERABLE DIFFERENCE BETWEEN SOVIET AND U.S. OCCUPATIONAL STANDARDS. BOTH COUNTRIES CONTINUOUSLY REEXAMINE THEIR SCIENTIFIC BASIS. THE U.S. OCCUPATIONAL SAFETY STANDARD IS 10 MILLIWATTS PER SQUARE CENTIMETER (10,000 MICROWATTS). IT IS BASED ON MINIMIZING THE HEAT STRESS PLACED ON THE BODY BY EXPOSURE LEVELS ABOVE 10 MILLIWATTS PER SQUARE CENTIMETER.

THE SOVIET OCCUPATIONAL STANDARD IS 1,000 TIMES LOWER, 10 MICROWATTS PER SQUARE CENTIMETER FOR A WORKING DAY. IN SETTING STANDARDS THE SOVIETS HAVE TAKEN AN APPROACH WHICH IS QUITE DIFFERENT FROM THAT WHICH SCIENTISTS OF THE UNITED STATES OR WESTERN EUROPE BELIEVE IS JUSTIFIED BY EITHER SCIENTIFIC DATA OR EXPERIENCE.

CONFIDENTIAL

PAGE 10 STATE 166451

IN THE UNITED STATES VARIOUS GROUPS CONTINUOUSLY REVIEW NEW SCIENTIFIC RESULTS, ANY SPECIAL SITUATIONS AS WELL AS STANDARDS. THESE INCLUDE THE NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH), ENVIRONMENTAL PROTECTION AGENCY (EPA), BUREAU OF RADIOLOGICAL HEALTH (BRH) OF THE FOOD AND DRUG ADMINISTRATION (FDA), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) (AN INDUSTRY/UNIVERSITY GROUP), THE ELECTROMAGNETIC RADIATION MANAGEMENT ADVISORY COUNCIL (ERMAC) AN ADVISORY GROUP TO THE OFFICE OF TELECOMMUNICATIONS POLICY IN THE EXECUTIVE OFFICE OF THE PRESIDENT, AND VARIOUS NATIONAL ACADEMY OF SCIENCES GROUPS.

OCCUPATIONAL STANDARDS ARE NOT DIRECTLY RELEVANT TO THE SITUATION IN THE EMBASSY. THERE SOME PEOPLE CAN BE EXPOSED TO THIS RADIATION FOR MORE THAN 8 HOURS A DAY IF THEY LIVE IN CERTAIN AREAS OF THE CHANCERY. THOSE WHO LIVE AND WORK THERE INCLUDE NOT ONLY HEALTHY ADULTS BUT ALSO CHILDREN, SICK PERSONS, PREGNANT WOMEN AND OTHER GROUPS TYPICAL OF A GENERAL POPULATION. THE APPROACH IN SETTING ENVIRONMENTAL STANDARDS FOR THE GENERAL POPULATIONS WOULD BE THAT THEY SHOULD BE LOWER THAN OCCUPATIONAL STANDARDS. HOWEVER, THE LACK OF

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

CONFIRMED DATA SHOWING ANY HAZARD AT LEVELS BELOW 10 MILLIWATTS PER SQUARE CENTIMETER (10,000 MICROWATTS PER SQUARE CENTIMETER) HAVE NOT MADE THE SETTING OF A GENERAL POPULATION STANDARD APPEAR NECESSARY IN THE UNITED STATES. IN THE SOVIET UNION AN ARBITRARY FACTOR OF 10 HAS BEEN APPLIED TO THEIR OCCUPATIONAL STANDARD SO THAT THEIR PUBLISHED GENERAL POPULATION SAFETY LEVEL IS ONE MICROWATT PER SQUARE CENTIMETER FOR INDEFINITE EXPOSURE.

EFFECTS OF EXPOSURE

CONCERN OVER POSSIBLE ADVERSE HEALTH IMPLICATIONS FROM THE SIGNALS AT THE EMBASSY WAS STIMULATED BY THE CHANGES IN THEIR CHARACTERISTICS AND OPERATION--I.E., APPEARANCE OF 2 SIGNALS, INCREASES IN INTENSITY LEVELS AND PERIODS OF OPERATION--AS PREVIOUSLY DESCRIBED. ALTHOUGH THE MAXIMUM LEVELS OBSERVED AND THEIR DURATION RESULTED IN CONFIDENTIAL

ONLY EXTREMELY LOW EXPOSURES, WE FELT OUR APPROACH SHOULD TAKE ACCOUNT OF THE POSSIBILITY THAT THESE INCREASES MIGHT CONTINUE AND COULD REACH POTENTIALLY HAZARDOUS LEVELS.

THERE HAS BEEN CONSIDERABLE RESEARCH AND MUCH KNOWLEDGE HAS BEEN ACCUMULATED ON THE EFFECTS OF MICROWAVE EXPOSURES AT POWER DENSITY LEVELS ABOVE 10 MILLIWATTS OR 10,000 MICROWATTS PER SQUARE CENTIMETER. AT SUFFICIENTLY HIGH LEVELS (E.G., AROUND AND ABOVE 100 MILLIWATTS OR 100,000 MICROWATTS PER SQUARE CENTIMETERS) MICROWAVE EXPOSURES CAN CAUSE HARMFUL BIOLOGICAL EFFECTS ASSOCIATED PRIMARILY WITH TISSUE HEATING DUE TO ENERGY ABSORPTION. THIS PRINCIPLE IS USED IN SUCH FAMILIAR PROCESSES AS MICROWAVE COOKING, MEDICAL DIATHERMY TREATMENT, AND VARIOUS INDUSTRIAL PROCESSES. THE KINDS OF EFFECTS THAT CAN OCCUR AT HIGH LEVELS INCLUDE CATARACT FORMATION, BURNS AND OTHER EFFECTS TYPICALLY ASSOCIATED WITH HEATING. CLAIMS THAT CATARACTS HAVE OCCURRED AT LOWER LEVELS HAVE NOT BEEN SUBSTANTIATED AND NO CAUSAL CONNECTION HAS BEEN ESTABLISHED BETWEEN MICROWAVE RADIATION AND DEVELOPMENT OF CANCER.

THERE ARE SOME REPORTS IN THE SCIENTIFIC LITERATURE ASSOCIATING EFFECTS WITH EXPOSURES TO LEVELS BELOW THOSE KNOWN TO PRODUCE MEASURABLE HEATING. FOR EXAMPLE, THESE INCLUDE A VARIETY OF NONSPECIFIC COMPLAINTS--SUCH AS INABILITY TO CONCENTRATE, FATIGUE HEADACHES--AND OTHER FUNCTIONAL AND REPORTEDLY REVERSIBLE CHANGES INCLUDING SHIFTS IN THE RATIOS OF DIFFERENT BLOOD CELLS. EVEN THESE REPORTS, WHICH ARE MOSTLY IN THE EAST EUROPEAN LITERATURE, ASSOCIATE EFFECTS WITH PROLONGED

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

EXPOSURES AT LEVELS GENERALLY IN THE RANGE OF HUNDREDS
TO THOUSANDS OF MICROWATTS PER SQUARE CENTIMETER, WHICH
IS FAR GREATER THAN ANYTHING OBSERVED IN THE EMBASSY.

THERE IS GENERAL, IF NOT TOTAL, UNANIMITY AMONG AMERICAN
EXPERTS THAT EXPOSURE BELOW THE MILLIWATT (1,000 MICRO-
WATTS) PER SQUARE CENTIMETER LEVEL DO NOT PRODUCE
HAZARDOUS EFFECTS. THERE IS LESS UNANIMITY ABOUT THE

CONFIDENTIAL

PAGE 12 STATE 166451

LOWEST LEVEL AT WHICH EFFECTS ARE OBSERVED, EVEN IF
THEY ARE NOT HAZARDOUS. THIS IS THE SUBJECT OF RESEARCH
IN THE UNITED STATES AND OTHER COUNTRIES, INCLUDING A
RECENTLY SIGNED US-USSR COOPERATIVE RESEARCH AGREEMENT.

THE EXPERT CONSULTANTS WITH WHOM THE DEPARTMENT HAS
BEEN WORKING ON THE POSSIBLE MEDICAL ASPECTS OF THIS
PROBLEM HAVE CONCLUDED THAT WITH CURRENT LOW INTENSITY
LEVEL AND WITH THE SCREENING IN PLACE THERE IS NO CAUSE
FOR CONCERN OVER HEALTH HAZARDS. THEY HAVE ALSO CONCLUDED
THAT THERE IS NO EVIDENCE THAT ESTABLISHES A CONNECTION
BETWEEN THE RADIATION AND ANY HEALTH PROBLEM EXPERIENCED
BY THOSE AT THE EMBASSY NOW OR IN THE PAST. ALTHOUGH
IT IS VIRTUALLY IMPOSSIBLE TO PROVE THE ABSENCE OF A
CAUSE AND EFFECT RELATIONSHIP, THE VALIDITY OF THIS
CONCLUSION WILL BE TESTED BY A DETAILED STATISTICAL
EVALUATION AND SURVEY PERFORMED BY OUTSIDE CONSULTANTS.
WE ARE ALSO KEEPING THE HEALTH OF OUR MOSCOW EMPLOYEES
UNDER CLOSE OBSERVATION. IN ORDER TO BE SURE THAT WE
ARE NOT OVERLOOKING ANY HEALTH PROBLEMS WE ARE LOOKING
FOR BROAD, GENERAL INDICATORS OF ANY POSSIBLE DIFFERENCES
IN BODILY FUNCTIONS. ONE VERY EASILY OBSERVABLE HEALTH
INDICATOR IS THE EVALUATION OF THE BLOOD. THIS CAN
DETECT CHANGES ASSOCIATED WITH A BROAD SPECTRUM OF
HEALTH CONDITIONS, AND DEVIATIONS FROM ACCEPTED WHITE
CELL COUNTS NOT EXPLAINED BY OTHER PHENOMENA (FLU,
INJECTIONS, ALLERGIES, PARASITES ETC.) WOULD BE A
WARNING SIGN. THUS BLOOD SAMPLES OF THOSE AT POST ARE
BEING EXAMINED MORE CAREFULLY THAN BEFORE AND A MEDICAL
TECHNICIAN HAS BEEN ASSIGNED THERE FOR THIS PURPOSE.
ANY PERSISTENT ABNORMALITIES, WHATEVER THE CAUSE, ARE
THOROUGHLY INVESTIGATED. END TEXT.
9. BEGIN TEXT OF PRESS GUIDANCE:

QUESTION ONE: HAS THERE BEEN ANY PROGRESS IN DISCUSSIONS
WITH SOVIETS REGARDING THE MOSCOW SIGNAL?

ANSWER ONE: THE SECRETARY HAS ON PREVIOUS OCCASIONS NOTED
THE DELICACY OF OUR DISCUSSIONS WITH THE SOVIETS ON
THIS ISSUE AND I DO NOT INTEND TO DISCUSS THOSE TALKS IN
DETAIL. HOWEVER, AS A RESULT OF OUR DISCUSSIONS, THE

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

STRENGTH OF THE SIGNAL BEAMED AT OUR EMBASSY IN MOSCOW HAS BEEN GREATLY REDUCED FROM PREVIOUS RECORDINGS WHICH WERE THEMSELVES WELL BELOW ESTABLISHED U.S. SAFETY STANDARDS. -URRENT SIGNAL LEVELS ARE ALSO BELOW THE ESTABLISHED SOVIET STANDARD (10 MICROWATTS PER SQUARE CENTIMETER), WHICH IS 1,000 TIMES LOWER THAN OUR OWN STANDARD.

QUESTION TWO: WHAT ABOUT THE HEALTH OF THE EMPLOYEES IN MOSCOW NOW OR OF THOSE WHO HAVE SERVED THERE IN THE PAST? AMBASSADOR STOESSEL?

ANSWER TWO: THE HEALTH OF OUR EMPLOYEES IS AN ISSUE OF PARAMOUNT IMPORTANCE FOR THE DEPARTMENT. AS I HAVE INDICATED BEFORE, HOWEVER, WE WILL NOT DISCUSS THE HEALTH OF ANY EMPLOYEE AND THAT INCLUDES AMBASSADOR STOESSEL. THIS IS PRIVATE AND MEDICALLY PRIVILEGED INFORMATION. HOWEVER, AS A RESULT OF THE REDUCTION IN SIGNAL STRENGTH, AND UNILATERAL STEPS WE HAVE TAKEN, CURRENT RADIATION LEVELS WITHIN THE EMBASSY ARE BELOW CURRENT SOVIET OR U.S. SAFETY STANDARDS. THE EXPERT CONSULTANTS WITH WHOM WE HAVE WORKED ON THIS PROBLEM HAVE CONCLUDED THAT THERE IS NO CAUSE FOR CONCERN REGARDING HEALTH HAZARDS.

QUESTION THREE: WHAT UNILATERAL STEPS HAVE WE TAKEN?

ANSWER THREE: ALUMINUM SCREENING HAS BEEN INSTALLED IN WINDOW AREAS THROUGHOUT THE EMBASSY. THIS SCREENING EFFECTIVELY CUTS THE SIGNAL STRENGTH BY 90 PERCENT.

QUESTION FOUR: WHAT ABOUT THOSE WHO SERVED IN MOSCOW BEFORE THE SIGNAL STRENGTH WAS REDUCED?

ANSWER FOUR: IN VIEW OF QUESTIONS RAISED ABOUT THE POSSIBLE EFFECTS OF RADIATION AT LEVELS EXISTING IN THE PAST, CONSULTANTS ARE NOW WORKING ON A DETAILED EVALUATION AND SURVEY TO TEST THEIR PROVISIONAL CONCLUSION THAT THERE IS NO CORRELATION BETWEEN THE MICROWAVE RADIATION LEVELS AT OUR EMBASSY IN MOSCOW AND ANY HEALTH PROBLEM ENCOUNTERED BY EMPLOYEES WHO HAVE SERVED THERE.

QUESTION FIVE: DO THE SOVIETS PLAN TO TURN THE SIGNALS

OFF ALTOGETHER?

ANSWER FIVE: THE STRENGTH OF THE SIGNALS HAS BEEN REDUCED BUT THEY HAVE NOT BEEN TURNED OFF. THE TERMINA-TION OF THESE SIGNALS IS OUR OBJECTIVE. WE PLAN TO CONTINUE

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

TO MONITOR THE TRANSMISSIONS TO ASSURE THAT WE WILL KNOW IMMEDIATELY IF THEIR STRENGTH IS AGAIN INCREASED. THE POSSIBILITY OF SUCH AN INCREASE IS OF COURSE A MATTER OF GREAT CONCERN FOR THE DEPARTMENT AND FOR OUR EMPLOYEES. WE REGRET THAT THE SOVIETS HAVE FAILED TO TURN THE TRANSMISSIONS OFF COMPLETELY, THEREBY DEMONSTRATING A LACK OF CONCERN FOR THE LIVING AND WORKING CONDITIONS OF OUR PEOPLE IN MOSCOW.

QUESTION SIX: WHAT CAN YOU TELL US ABOUT THE CHARACTERISTICS OF THE RADIATION ITSELF?

ANSWER SIX: OUR EMPLOYEES HAVE BEEN BRIEFED FULLY ON THE SITUATION IN MOSCOW AND HAVE BEEN PROVIDED A DESCRIPTION OF THE NATURE OF THE RADIATION. I CAN TELL YOU THAT THE RADIATION IN THE EMBASSY WITH SCREENING IN PLACE AT PRESENT IS A FRACTION OF A MICROWATT PER SQUARE CENTIMETER IN ALL LIVING AND WORKING AREAS. AS I HAVE ALREADY INDICATED, THIS IS BELOW CURRENT SOVIET OR U.S. SAFETY STANDARDS.

QUESTION SEVEN: IS THIS LIKE X-RAY RADIATION?

ANSWER SEVEN: NO, X-RAYS ARE IONIZING RADIATION, THE DELETERIOUS EFFECTS OF WHICH IN CERTAIN CIRCUMSTANCES ARE WELL KNOW; MICROWAVE TRANSMISSIONS ARE NON-IONIZING AND HAVE BEEN PROVED HARMFUL ONLY AT VERY HIGH POWER DENSITIES. END TEXT. ROBINSON

CONFIDENTIAL

<< END OF DOCUMENT >>

Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006

Message Attributes

Automatic Decaptioning: Z
Capture Date: 15 SEP 1999
Channel Indicators: n/a
Current Classification: UNCLASSIFIED
Concepts: TEXT, HEALTH, BRIEFING MATERIALS, NUCLEAR HAZARDS, RADIATION SHIELDING, EMBASSIES, DIPLOMATIC PERSONNEL, CAT-A
Control Number: n/a
Copy: SINGLE
Draft Date: 03 JUL 1976
Decaption Date: 28 MAY 2004
Decaption Note: 25 YEAR REVIEW
Disposition Action: RELEASED
Disposition Approved on Date:
Disposition Authority: ShawDG
Disposition Case Number: n/a
Disposition Comment: 25 YEAR REVIEW
Disposition Date: 28 MAY 2004
Disposition Event:
Disposition History: n/a
Disposition Reason:
Disposition Remarks:
Document Number: 1976STATE166451
Document Source: ADS
Document Unique ID: 00
Drafter: S:WEGAN / EUR/SOV:MGARRISON:RBARRY:LCK
Enclosure: n/a
Executive Order: 11652 GDS
Errors: n/a
Film Number: P840096-1643, P840105-0079
From: STATE
Handling Restrictions: n/a
Image Path:
ISecure: 1
Legacy Key: link1976/newtext/t197607109/baaaepfr.tel
Line Count: 625
Locator: TEXT ON-LINE, TEXT ON MICROFILM
Office: ORIGIN NODS
Original Classification: CONFIDENTIAL
Original Handling Restrictions: ONLY NODIS
Original Previous Classification: n/a
Original Previous Handling Restrictions: n/a
Page Count: 12
Previous Channel Indicators:
Previous Classification: CONFIDENTIAL
Previous Handling Restrictions: ONLY NODIS
Reference: n/a
Review Action: RELEASED, APPROVED
Review Authority: ShawDG
Review Comment: n/a
Review Content Flags:
Review Date: 03 MAY 2004
Review Event:
Review Exemptions: n/a
Review History: RELEASED <03 MAY 2004 by ElyME>; APPROVED <07 SEP 2004 by ShawDG>
Review Markings:

Margaret P. Grafeld
Declassified/Released
US Department of State
EO Systematic Review
04 MAY 2006

Review Media Identifier:
Review Referrals: n/a
Review Release Date: n/a
Review Release Event: n/a
Review Transfer Date:
Review Withdrawn Fields: n/a
Secure: LOCK1
Status: NATIVE
Subject: ELEASE OF MOSCOW SIGNAL FACT SHEET
TAGS: ASEC, AMED, UR, US
To: MOSCOW
Type: TE
Markings: Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006